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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/568,982 | 02/21/2006 | Jeffery S. Bradley | 63036A | 8860 |

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THE DOW CHEMICAL COMPANY
INTELLECTUAL PROPERTY SECTION, P. O. BOX 1967
MIDLAND, MI 48641-1967

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| EXAMINER |
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LU, C CAIXIA

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| ART UNIT | PAPER NUMBER |
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1713

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09/24/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

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|------------------------------|--------------------------------------|---------------------------------------|--|
| Office Action Summary | Application No. 10/568,982 | Applicant(s) BRADLEY ET AL. | |
| | Examiner Caixia Lu | Art Unit 1713 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 July 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 6-14 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 and 15-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 1-20 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Election/Restrictions

1. Restriction is required under 35 U.S.C. 121 and 372.

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1.

In accordance with 37 CFR 1.499, applicant is required, in reply to this action, to elect a single invention to which the claims must be restricted.

Group I, claim(s) 1-5 and 15-20, drawn to a catalyst composition.

Group II, claim(s) 6-14, drawn to a polymerization process.

2. The inventions listed as Groups I and II do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: the catalyst of Group I taught in the prior, e.g. Rebhan (US 5,432,244). As the recited catalyst does not make a contribution over the prior art, i.e. the special technical feature(s) is anticipated by or obvious in view of the prior art, unity of invention is lacking and restriction is appropriate.

3. Applicant has amended claims and added new claims. Since newly added claims introduced new limitations such as titanium residual and xylene soluble limitations in claims 13 and 14 of Group II, Group I is considered representative of the subject matter already under examination. Therefore, Group II, claims 6-14 are

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withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

4. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Claim Rejections - 35 USC § 103

2. Claims 1-5 and 15-20 are rejected under 35 U.S.C. 103(a) as obvious over Rebhan (US 5,432,244) in view of Seeger et al. (US 5,414,063).

The instant claims are directed to a Ziegler-Natta catalyst composition and a polymerization process thereof, wherein the catalyst composition comprising (i) a procatalyst containing a transition metal compound and an internal electron-donor of an ester of aromatic monocarboxylic acid, (ii) an alkylaluminum cocatalyst, and a mixture of different selectivity control agents (SCA) comprising an ester of aromatic monocarboxylic acid and dicyclopentyldimethoxysilane.

Rebhan teaches a Ziegler-Natta for olefin polymerization comprising (i) a procatalyst containing a transition metal compound and an internal electron-donor of an ester of aromatic mono- or dicarboxylic acid, (ii) an alkylaluminum cocatalyst, and a mixture of different selectivity control agents (SCA) comprising an ester of aromatic monocarboxylic acid and an alkoxysilane compound (col. 1, line 57 to col. 4, line 68; and Examples 2-3 and 5-16).

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While the catalyst compositions of Rebhan's Examples 2-3 and 5-16 are substantially similar to those of the instant claims except that the silane SCA used in Rebhan's Examples is not dicyclopentylmethoxysilane of the instant claims. While Rebhan does not expressly teach dicyclopentylmethoxysilane, Rebhan does not exclude any kind of alkoxysilanes as the SCA. Dicyclopentyl-dimethoxysilane was well known and commonly used at the time of invention, and such is disclosed in Seeger (col. 6, line 48). Therefore, dicyclopentylmethoxysilane would have been an obvious alkoxysilane choice for Rebhan.

Thus, it would have obvious to a skilled artisan to employ Rebhan's teaching and use dicyclopentylmethoxysilane to prepare the catalyst composition since such is within the scope of Rebhan's teaching and in the absence of any showing criticality and unexpected results.

Response to Arguments

3. Applicant's arguments filed July 19, 2007 have been fully considered. The rejection under 35 U.S.C. 103(a) as obvious over Seeger et al. (US 5,414,063) is withdrawn in view applicants' Remark. Indeed, Seeger's external electron donor PEEB used in the working examples is not a part of the catalyst and the function of PEEB is to terminate the polymerization. Therefore, Seeger does not teach or reasonably suggest the instant claims.

Applicants argue that Rebhan fails to disclose or suggest the SCA of alkoxysilane to be dicyclopentylmethoxysilane. The examiner disagrees. While Rebhan does not expressly teach dicyclopentylmethoxysilane, Rebhan does not

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exclude any alkoxysilanes as the SCAs. Dicyclopentyldimethoxy-silane was well known and commonly used at the time of invention, and such is disclosed in Seeger (col. 6, line 48)). Therefore, dicyclopentyldimethoxysilane would have been an obvious alkoxysilane choice for Rebhan.

Applicants indicate that the catalyst composition comprising of SCA mixture of dicyclopentyldimethoxysilane and ethyl p-ethoxybenzoate provides unexpected higher catalyst activity compared to catalyst with SCA mixture of methylcyclohexyldimethoxysilane and ethyl p-ethoxybenzoate (PEEB) as shown in Table 1 of the specification. However, such a showing is not commensurate to the scope of the instant claims and is not based on the working examples of the cited prior art. Except claim 12, the catalyst of instant claims do not limit the esters of monocarboxylic acids to PEEB only, however, the showing of unexpected result is limited to PEEB. While the alkoxysilanes used in the working examples of Rebhan are diisobutyldimethoxysilane and ethyltriethoxysilane, applicants' comparison is based on methylcyclohexyldimethoxysilane and n-propyltrimethoxysilane which are different from Rebhan. That is, the showing is not based the closest prior art. To rebut a prima facie case of obviousness, applicant must compare his claimed invention to the closet prior art. In re Merchant, 575 F. 2d 865, 869, 197 USPQ 785, 788 (CCPA 1978). Therefore, applicants' showing is not probative of any Patentability.

In view of the foregoing, the rejection over Rebhan is maintained.

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Conclusion

4. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Caixia Lu whose telephone number is (571) 272-1106. The examiner can normally be reached from 9:00 am to 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful and the matter is urgent, the examiner's supervisor, David Wu, can be reached at (571) 272-1114. The fax numbers for the organization where this application or proceeding is assigned is (571) 273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-1700.



Caixia Lu, Ph. D.
Primary Examiner